

**REMARKS/ARGUMENTS**

Reconsideration is respectfully requested.

Claims 1-10 are pending before this amendment. By the present amendment, claims 1, 2, 5, 6, 8, 9 and 10 are amended and claim 7 is canceled without prejudice. No new matter has been added.

**Allowable Subject Matter**

In the office action (page 8), the examiner indicates claims 9 as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. The applicants thank the examiner for this indication of allowable subject matter. The applicants have amended independent claims 1 and 6 to include the important part of the allowable subject matter of claim 9 without including all of the limitations of claim 9 with the intention of inviting a notice of allowance. Therefore, the applicants respectfully submit that claim 1 (and similarly claim 6), which has been amended to clarify the presently claimed invention, is allowable over the cited prior art references as is discussed below.

In the office action (page 2), figs. 1-3 and 5 of the drawings stand objected to as containing numeric labels, which make it hard to understand the invention. In response the applicants have subsequently amended FIGS. 1-3 and 5 to have alphanumeric labels as suggested by the examiner and are attaching the corresponding annotated and replacement drawings in the appendix of this response. Accordingly, the applicants respectfully request that this objection to the drawings be withdrawn.

In the office action (page 3), claim 1 stands rejected under the doctrine of

obviousness-type double patenting over corresponding claim 7 of U.S. Application No. 10/537,846 (Kim). The "et al." suffix is omitted in a reference name. Also, in the office action (page 4), claim 6 stands rejected under the doctrine of obviousness-type double patenting over corresponding claim 1 of Kim. In response, a terminal disclaimer is submitted herewith, thereby overcoming the provisional rejection under the judicially created doctrine of obviousness-type double patenting. Withdrawal of the rejection is respectfully requested.

In the office action (page 4), claims 1-8 and 10 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Publication No. 2003/0118015 (Gunnarsson) in view of U.S. Publication No. 2002/0187780 (Souissi). The "et al." suffix is omitted in a reference name.

The present invention relates to a method for automatically searching a wireless LAN AP (access point), wherein the automatically searching a wireless LAN AP based on wireless LAN AP location information provided within a service area of a base station and connecting device having its location information through a GPS (global positioning system), and a connecting device for performing the method. (specification at page 1, lines 6-9). The wireless LAN module of the present invention will detect a beacon signal periodically output from the wireless LAN AP and search a wireless LAN AP by a controller for selectively operating the WLAN module based on the position information of the communication device output from the GPS receiving module and the position information of the WLAN access point stored in the storage unit **when the communication device is within a predetermined radius of service of the WLAN access point stored in the storage unit** (specification at page 9, lines 9-22; page 11,

line 9 to page 13, line 12; and FIGs. 5-7)

The applicants have amended independent claim 1 (and similarly independent claim 6) to better clarify the presently claimed invention as described above and for being patentable over the applied reference(s). Claim 1 now recites, inter alia:

--a controller for selectively operating the WLAN module based on the position information of the communication device output from the GPS receiving module and the position information of the WLAN access point stored in the storage unit,

**wherein the controller receives new WLAN access point position information after receiving a "Position Information Renewal" message from a position information server according to checking result of version information on the WLAN access point position information, and renews the stored position information--.**

Support for the limitations added to claim 1 can be found on at least specification at page 9, lines 9-22; page 11, line 9 to page 13, line 12; and FIGs. 5-7.

The applicants' respectfully submit that Gunnarsson and/or Souissi fails to teach or suggest this limitation of the present invention of amended claim 1. The examiner concede that Gunnarsson does not teach acquiring location information of the wireless LAN AP provided in a service area of a base station from the base station connected through the mobile communication module. To cure this deficiency the examiner looks to Souissi for providing a roaming table containing **only** geographic locations of preferred networks, which can be a WLAN, which contains an AP (OA page 5). However, nowhere in Gunnarsson and/or Souissi teaches or suggests activating/scanning for networks when the mobile device travels within a preferred network based on when the current location of the mobile device is within a **predetermined service radius of the preferred network** to save power in the mobile device. Accordingly, as agreed by the examiner (OA page 8-9), nowhere does

Gunnarsson and/or Souissi teaches or suggests having a controller for receiving **new WLAN access point position information after receiving a "Position Information Renewal" message from a position information server according to checking result of version information on the WLAN access point position information, and renews the stored position information.**

In contrast, FIGs. 5 and 6 illustrates that Souissi begins scanning for the networks 504 and 505 once the device enters a UMTS coverage area having a defined respective CID, wherein a respective roaming table mechanism 600 is associated with the respective CID and **not** when device coverage area of networks 504 and/or 505. As should be appreciated by the examiner, nowhere does Souissi mentions scanning once the device enters that **service radius of the respective networks 504 and 505** Souissi ([0062]-[0065] and [0083]).

In contradistinction, FIGs. 5-7 of the present invention shows an operational diagram/flow chart for operating the WLAN module based on the position information of the communication device output from the GPS receiving module and the position information of the WLAN access point stored in the storage unit **when the communication device is within a predetermined radius of service of the WLAN access point stored in the storage unit**, wherein:

"[t]he WLAN access point position information includes a WLAN access point geographical position 11 and a WLAN access point service radius 12. The WLAN access point geographical position 11, in turn, includes latitudinal and longitudinal information that may be precisely determined through a GPS. The WLAN access point service radius 12 is a distance from the WLAN access point geographical position 11 in which WLAN access point service is possible (e. g. , 10 meters). To obtain **more precise service radius information, the actual WLAN access point service radius may be used after measuring the same.**

If the above position information reception and renewal processes

of the WLAN access point 20 are performed through the position information server 40 as described above, the controller 14 of the user terminal 10 either stores WLAN access point position information in the storage unit 13 or renews the stored position information. There may be information of more than one WLAN access point position stored in the storage unit 13.

With the reception and renewal of WLAN access point position information, the user terminal 10 selectively performs WLAN access point connection based on the position information.

FIG. 6 is a flow chart showing the sequential operations of the user terminal 10.

After the WLAN access point position information is received from the position information server 40 and stored, the user terminal 10 continuously checks its own position through the GPS satellites 60 and compares this with the stored WLAN access point position information. In more detail, the GPS receiving module 12 receives GPS data transmitted from the GPS satellites 60 to calculate the position of the user terminal 10, then the controller 14 compares the terminal position information provided by the GPS receiving module 12 with the WLAN access point position information stored in the storage unit 13 (steps S200-S220).

That is, the controller 14 compares the geographical position included in the WLAN access point position information with the user terminal position in step S220. If the WLAN access point position and user terminal position do not correspond, the controller 14 then **determines if the user terminal position is within the WLAN access point service radius** (steps S230 and S240).

If the user terminal position corresponds with the WLAN access point position, or if the user terminal is within the WLAN access point service radius, the controller 14 determines that the user terminal 10 has **entered the service region of the WLAN access point 20** and operates the WLAN module 11 to thereby detect the beacon signal transmitted by the WLAN access point 20 in step S250. Data services are then received through the WLAN access point 20.

FIG. 7 is a drawing showing an example of the relation between the user terminal 10 and WLAN access point locations as the user terminal 10 is moved.

If the user terminal 10 enters a **service region A1 of a WLAN access point 21**, the user terminal 10 **detects the beacon signal transmitted by the WLAN access point 21 then receives data services through the WLAN access point 21**. If the user terminal 10 leaves the service region A1 of the WLAN access point 21, since data services may no longer be received through the WLAN access point 21, the controller 14 of the user terminal 10 **stops the operation of the WLAN module 11 to conserve energy**"

(specification at page 11, line 9 to page 13, line 12 [emphasis added]).

As a result, the present invention is able to further reduce power consumption since the wireless LAN AP in service only searched **when the connecting device is within a predetermined radius of service information of the wireless LAN AP**. In addition, the user terminal **automatically** performs the comparison of the user terminal and WLAN access point positions, in addition to the searching of WLAN access points radius of service. As a result, the user does not experience the inconvenience of having to manually activate the search function.

Accordingly, the applicants respectfully submit, as noted by the examiner for allowing the subject matter of claim 9 (OA pages 8-9), that Gunnarsson either alone or in combination with Souissi fails to teach or suggest the limitations of claim 1, which incorporates the important limitations of the allowable subject matter of claim 9, which recites inter alia: --a controller for selectively operating the WLAN module based on the position information of the communication device output from the GPS receiving module and the position information of the WLAN access point stored in the storage unit, wherein the controller receives new WLAN access point position information after receiving a "Position Information Renewal" message from a position information server according to checking result of version information on the WLAN access point position information, and renews the stored position information--. Additionally, nowhere does Gunnarsson neither alone nor in combination with Souissi teaches, suggests, or even mentions scanning for LAN AP when a device/mobile station is within a predetermined **radius** of the respective wireless LAN AP in order to save power for the device/mobile station.

Independent claim 6 recites similar features to those found in claim 1. Therefore, for reasons analogous to those argued above with respect to claim 1, claim 6 is patentable over the applied references.

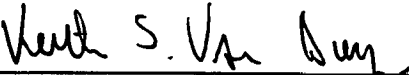
As to claims 2-5 and 8-10, the applicants respectfully submit that these claims are allowable at least since they depend from either claim 1 or claim 6, which is now considered to be in condition for allowance for the reasons mentioned above for claim 1.

For the reasons set forth above, the applicants respectfully submit that claims 1-6, and 8-10, now pending in this application, are in condition for allowance over the cited references. Accordingly, the applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter. Further, the examiner is authorized to cancel all withdrawn claims, via an examiner's amendment after issuance of the Notice of Allowance. The applicants reserve the right to present the canceled withdrawn claims in a divisional application.

This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,

Dated: June 30, 2009

  
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**APPENDIX OF ATTACHMENTS**

**Replacement Sheets of figs. 1-3 and 5  
(a total of 4 sheets of drawings)**

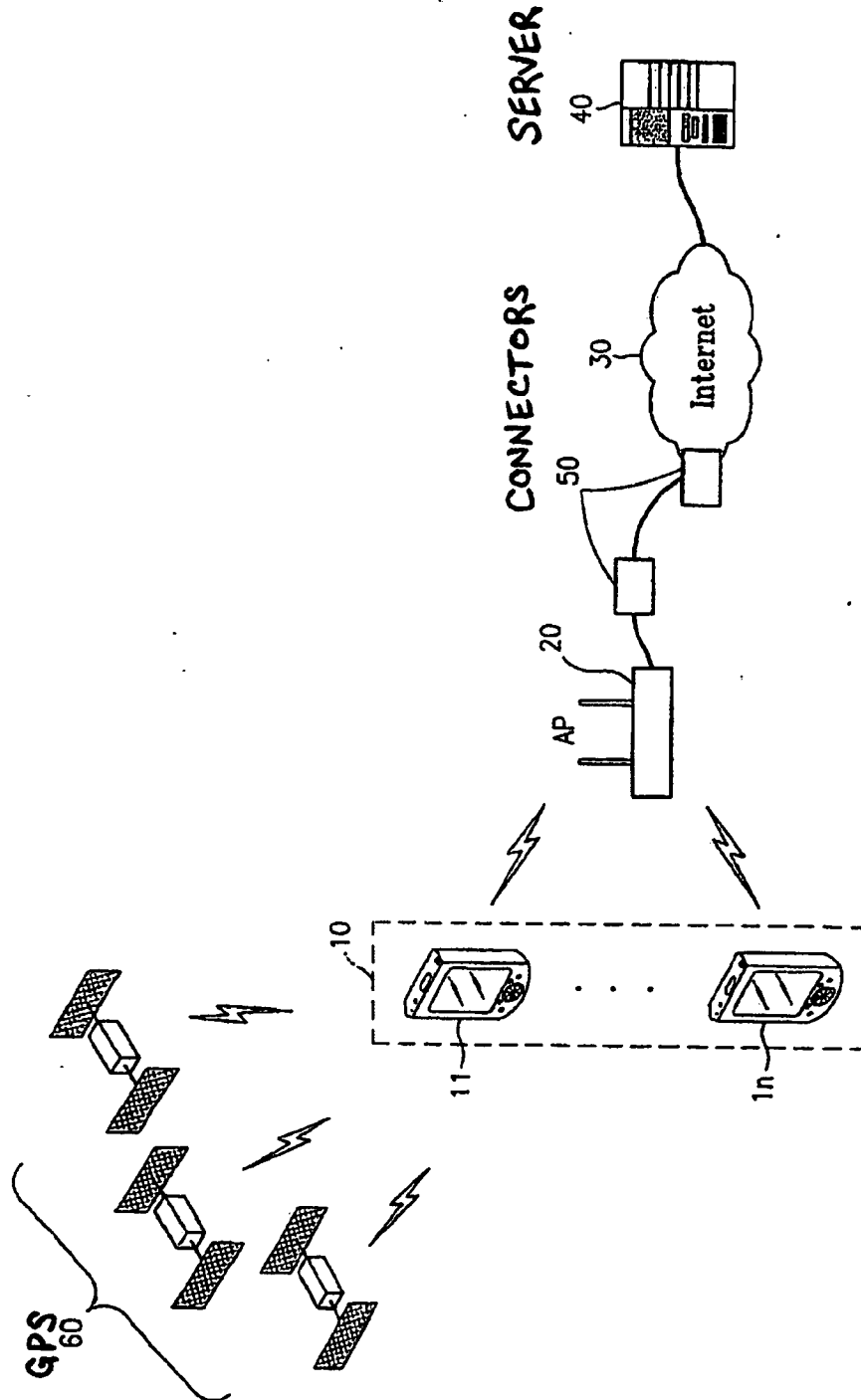
and

**Annotated Sheets Showing Changes of figs. 1-3 and 5  
(a total of 4 sheets of drawings)**



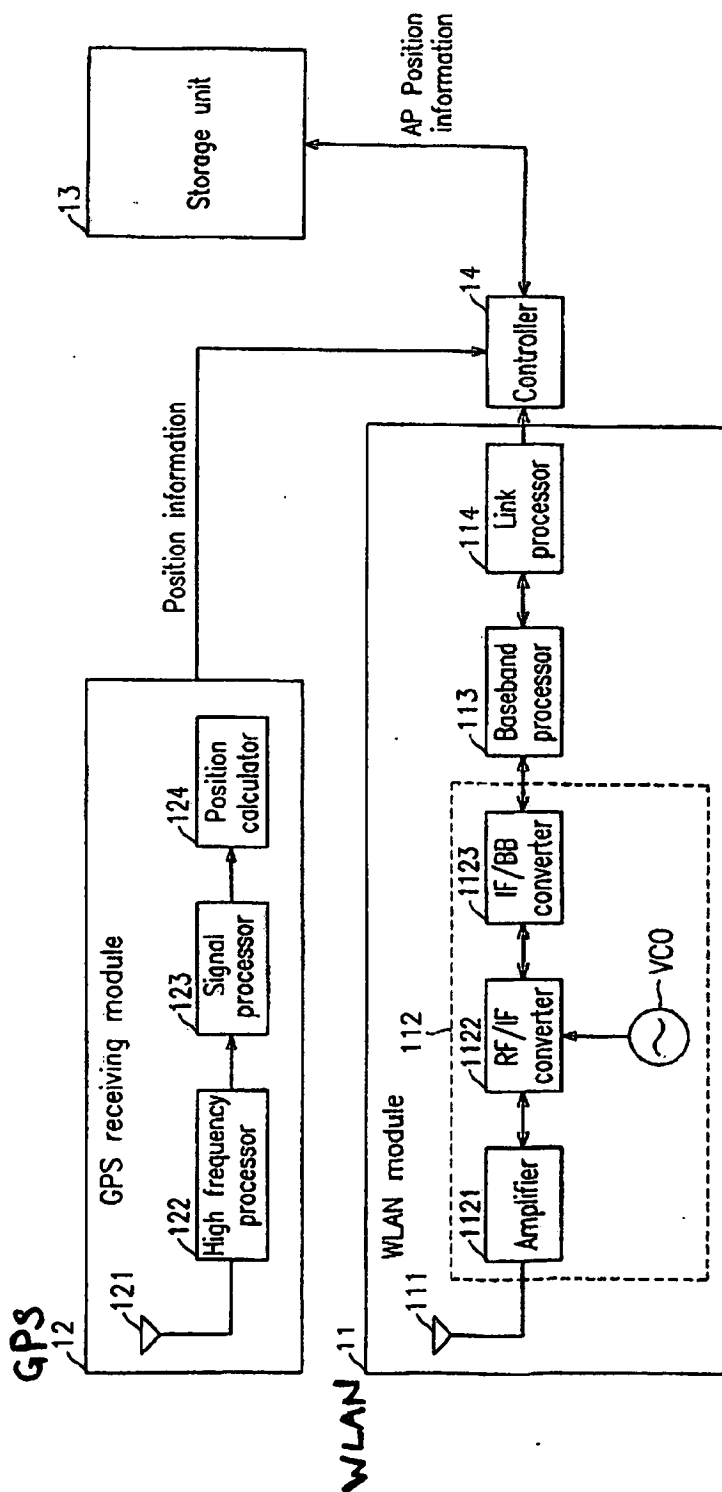
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FIG. 1



2/5

FIG. 2



3/5  
FIG.3

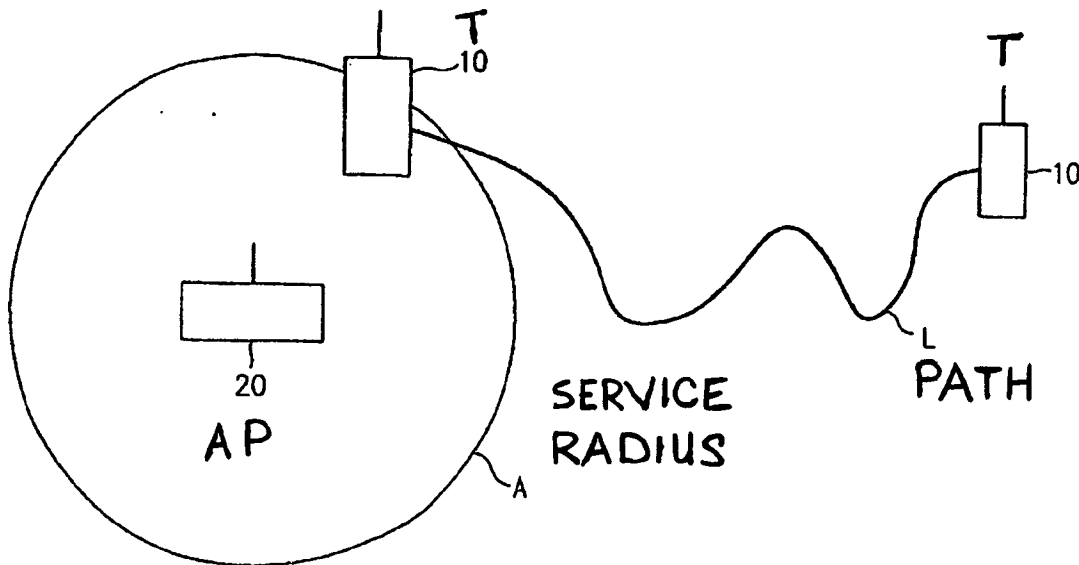
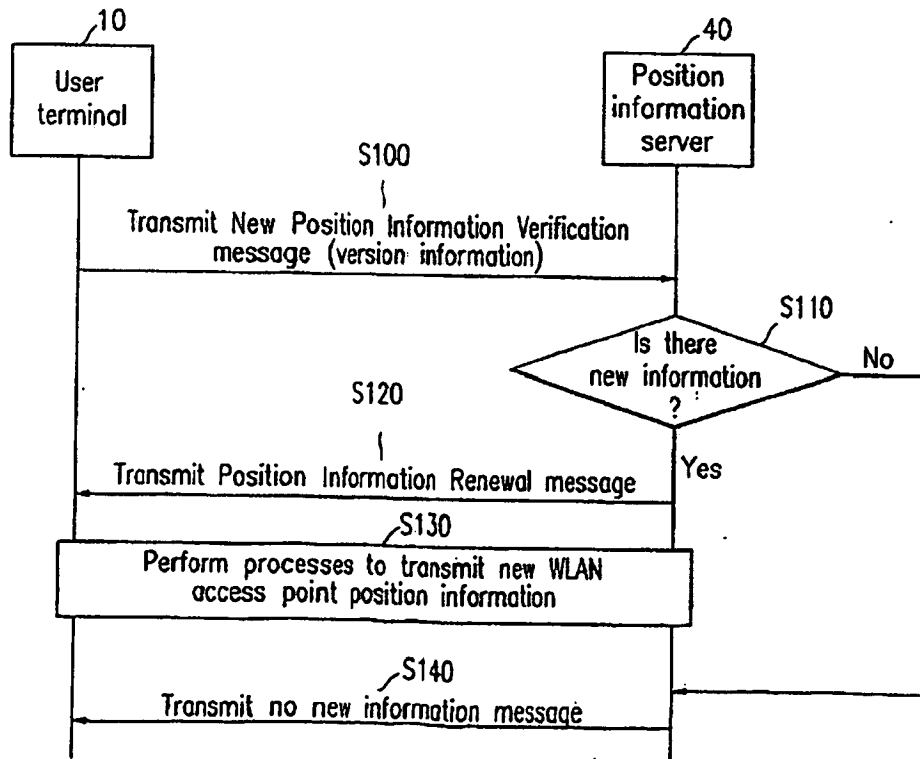


FIG.4



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FIG. 5

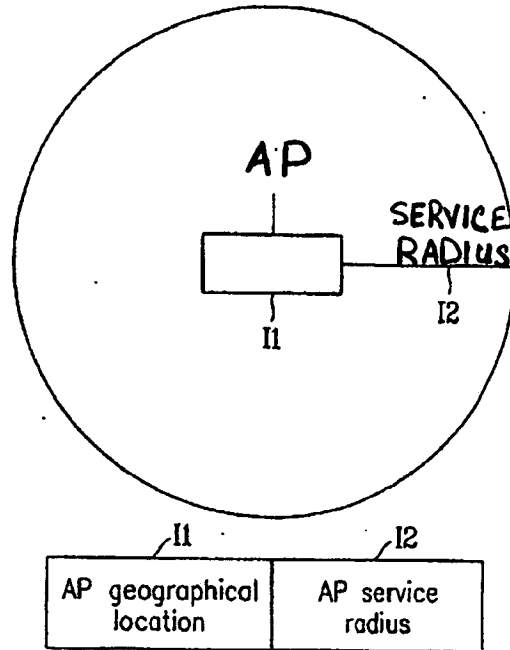


FIG. 6

